

# 1990 Critical Year

Concern	Tools	System Status	Priority	
		Historic	Action	Evaluation
Yearling salmon migrants Oct-Jan	• Increase inflow	Pulse of 15kcs	B	• B - Late Dec - Jan (10-100/TAF)
	• Reduce export	10,000		
	• Close DCC	Open		
Winter run survival Dec-Mar	• Increase outflow	10,000>>>0	A	• Mar relatively high numbers with outflow falling to zero and exports at 10,000+.
	• Reduce export	10kcs Mar		
	• Close DCC	Open		
Delta Smelt Adults Jan-Mar	• Reduce export	30000>>0	C	• Late Jan. 10+/TAF after outflow pulse and high exports
		10000+		
Steelhead Feb-May	• Reduce export	10000	B	• Feb-Mar 10-50/TAF
X2 Feb - June	• Increase outflow	Outflow 30000>>>0; 20000>>>0	B	Outflow falling to zero Jan-Mar.
	• Reduce export	15000>>>0		
Salmon Fry Feb-Mar			OK	Few fry
DS Young Apr-Jul	• Increase outflow	<5000 late June	A/B	• A - Late June and first week in July 1000/TAF • B - Mid April - mid June 100+/TAF
	• Reduce exports	10000 in April 2000-4000 May & Jun		
San Joaquin smolts Apr-Jun	• Reduce exports	• 10000>>2000 mid Apr-mid May • 2000-4000 mid May - mid Jun	A/B	• A - Mid April to Mid May 500-1000/TAF • B - Mid May to Mid Jun 100/TAF
	• Increase SJ flow	Very low		
	• Close HOR	Open		
Striped Bass Young	• Increase outflow	<5000; 30000 late May	B/C	• B - June to early July 10000/TAF • C - Late May and July 1000-10000
	• Reduce exports	2000-4000 Jun-early Jul		
Splittail May-Jul	Reduce exports	2000-4000	B	• June 100-1000/TAF

## New 1B-1990

- Initial conditions: low storages to start off year.
- Upstream AFRP Costs: 30 TAF
- Delta WQCP b(2): 450 TAF.
- 320 TAF left for Delta export actions.
- In-Delta b(2) export reductions: 234 TAF.
- 375 TAF lower exports under DAILY OPS than DWRSIM.
- Purchased 60 TAF demand shifting with MWD. (Feb-Mar) - not in the model case for this or last. Temporary borrowing to get through low-point at San Luis.
- 10% reduction in deliveries + 100 TAF from Delta Island storage + 60 TAF from demand shifting keeps San Luis above low point.

## Monthly Actions:

<b>October:</b>	No Actions
<b>November:</b>	B(2) Actions: Raise Stanislaus to 250 cfs
<b>December:</b>	B(2) Actions: Raise Stanislaus to 250 cfs
<b>January:</b>	B(2) Actions: Raise Stanislaus to 250 cfs EWA Actions: 1. Relaxed E/I first two weeks. 2. Cut maximum diversion to 13,000 cfs
<b>February:</b>	B(2) Actions: Raise Stanislaus to 300 cfs
<b>March:</b>	B(2) Actions: Raise Stanislaus to 300 cfs.
<b>April:</b>	B(2) Actions: 1500 cfs VAMP last half of month.
<b>May:</b>	B(2) Actions: 1500 cfs VAMP first half; 3000 extension of VAMP remainder.
<b>June:</b>	B(2) Actions: export restriction to 3000 cfs.
<b>July:</b>	B(2) Actions: export restriction to 3000 cfs for first week.
<b>August:</b>	No Actions.
<b>September:</b>	No Actions.

## Summary of Year:

- Exports: 3.5 MAF (Historic 5.8 MAF)
- Deliveries: 3.6 MAF (Historic 5.7 MAF)
- Outflow: 5.3 MAF (Historic 4.0 MAF)
- Storage: New Melones down 30 TAF.

## Performance of Assets:

- Expanded Banks used sparingly in winter (Jan) for water supply and two one-week periods to gain EWA water.
- Shasta expansion 290 TAF had no benefit.
- Delta Island storage - partially refilled and emptied for 100 TAF benefit to water supply (exports and deliveries).
- Groundwater storage recharged in fall and winter, then discharged to benefit San Luis in spring-summer. (Built into DWRSIM)

**EWA suggestions:**

- Short on winter run and smelt protection in March.
- Some additional protection needed from April into early July for salmon and delta smelt.